REMARKS

Rejection of claims of claims 34-36 under 35 U.S.C. 112, second paragraph, as indefinite

The Examiner rejected claims 34-36 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner found that it is unclear how the Applicant defines what is "coarse" in that the specification provides no guidance as to how "coarse" would be measured.

The Applicant has amended claims 34-36 to make them more definite. The term "coarsely macerating" in each claim has been replaced by the term "macerating". After the first intermediate is formed in paragraph (a) of each claim, this first intermediate is then macerated to form a pulp. These amendments are supported by the disclosure at page 22, lines 3-14.

It is therefore submitted that the meanings of claims 34-36 are clear and that the claims as rewritten are not indefinite.

Rejection of claims 34-36 under 35 U.S.C. 102(b) or under 35 U.S.C. 103(a)

The Examiner rejected claims 34-36 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Naples (US 3,279,900). The Examiner pointed out that, to the extent that product-by process limitations necessarily distinguish the invention from the prior art, the Applicant's specification does not set forth that such differences unexpectedly solve some problem in the art nor unexpectedly provide some new result when compared with the applied art. The Applicant respectfully disagrees with the Examiner's position and submits that the Applicant's claimed product is patentably distinguishable over Naples.

Each of claims 34, 35, and 36 define a combustible fuel source. Each of the combustible fuel sources claimed in claim 34, 35, and 36 is manufactured by respective methods recited in claims 34, 35, and 36. Each of the methods comprising, *inter alia*:

- "soaking a cellulose fiber product in water to form a first intermediate";
- "macerating the first intermediate to form a pulp"; and

- "drying the pulp to form a porous carrier"; and
- "impregnating the porous carrier with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier".

By following these method steps, the combustible fuel source is formed which is distinguishable over the product disclosed in Naples. Moreover, the Applicant's combustible fuel source formed using the method steps recited in claims 34, 35, and 36 is a superior product to the product disclosed in Naples.

Unlike the Applicant's combustible fuel source claimed in each of claims 34, 35, and 36, the product disclosed in Naples does not comprise a porous carrier impregnated with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier. Importantly, the Naples product is formed using a mechanical compression step. This is explained in the Naples reference at column 2, between lines 43 and 48:

> "Referring now more particularly to FIG. 1, my combination igniter-combustion pad is shown at 1. This I may make from any cellulose based material, such as wood pulp, or compressed wood fiber or felted fibrous pulp **pressed** into a pad approximately 1-1/2 inch thick."
>
> (Emphasis added).

By requiring this compression step, the Naples product cannot comprise "a porous carrier impregnated with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier. In particular, the compressed state of the cellulose-based material of the Naples product resists absorption of a liquified solid fuel (such as "ordinary paraffin wax", referred to in Naples at column 2, lines 48 to 49) upon application of a liquified solid fuel to the compressed cellulose based material. In contrast, the Applicant's cellulose fiber product is not subjected to a compression step before subsequent processing and impregnation with the liquified solid fuel. Because there is no compression step in the formation of the Applicant's fuel source, the Applicant's fuel source is characterized by combustion characteristics which are superior to those of the Naples product. Because the materials of the Naples product are compressed, combustion is suppressed and the resultant fuel source does not burn efficiently.

Additionally, unlike the Naples product, the Applicant's pre-cursor cellulose fiber product is subjected to processing steps which cause reduction in the strand length of the cellulose fibers. Notably, the Applicant's cellulose fiber product is first soaked in water and then macerated. The cellulose-based material of Naples is not subjected to such corresponding process steps. As such, the cellulose based material of the Naples product is comprised of relatively longer strand fibers than the Applicant's fuel source.

Because the Applicant's fuel source contains shorter strand fibers than the Naples product, the Applicant's fuel source has relatively larger amounts of solid fuel than the Naples product. This is because short strand fibers are relatively good liquid absorbers (i.e. the Applicant's cellulose fiber product is able to absorb more liquified solid fuel than Naples' cellulose based material). Further, because of the shorter strand fiber in the Applicant's fuel source, the Applicant's fuel source is characterized by superior structural integrity to the Naples product. Short strand fibers tend to exhibit stronger mechanical bonding with each other than corresponding fibers of a longer strand length. Further, unlike larger strand fibers, during combustion, the short strand fibers tend to retain the absorbed fuel even when the fuel becomes liquified. Both these characteristics contribute to the fact that the Applicant's fuel source exhibits superior structural integrity over the Naples product.

In combination, these factors illustrate that the Naples product is distinguishable from the Applicant's fuel source, and does not function in the same manner or confer the same benefits as the Applicant's fuel source. Notably, *inter alia*, unlike the Applicant's fuel source, the liquified solid fuel in the Naples product was never intended to function as the primary fuel source. This is illustrated in the Naples disclosure at column 2, between lines 48 and 52:

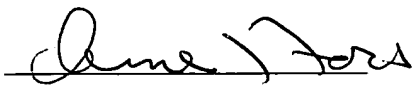
> "for best results, I may treat this with ordinary paraffin wax or other mildly combustible material which will **assist** in the combustion but will not in itself be a fire hazard and which may constitute 10-20% of the total weight of the pad."
>
> (Emphasis added).

In this respect, Naples concedes that its liquified solid fuel does not function as the primary fuel source in its product. This only reinforces what is already readily apparent upon comparing the Applicant's fuel source to the Naples product as above, which is that the

Naples product is not designed so that its liquefied solid fuel functions as the primary fuel source..

Favourable consideration is earnestly solicited and, if any issues remain outstanding, the Examiner is invited to telephone the undersigned agent for the Applicant at 416-862-5739.

Respectfully submitted,
D. LEE MANNER



Arne I. Fors
Registration No. 20,775

GOWLING LAFLEUR HENDERSON LLP
Suite 4900, Commerce Court West
Toronto, Ontario, 416-862-5739
Canada M5L 1J3

TOR_LAW\5132442

It should be noted that combustion of fuel source 20 appears to be largely a surface effect and it has been noted in tests that solid fuel which has been liquified but not vaporized and which has leeched out of body 24 and onto the support surface 27 does not tend to ignite.

Fuel source 20 has been tested using various porous carriers. Tests were conducted using combustible porous carriers with coarse paper and fine paper. In one test the relatively coa[u]rse paper employed in egg crates was used as the porous carrier and this has resulted in a relatively hot and quick combustion. The coa[u]rse paper used in egg crates is essentially any over-processed wood fibre or short fibre like Krofta Fines, which are expelled during the manufacturing process of wood fibres to achieve fluff pulp. Fluff pulp is used in environmentally friendly diapers and feminine napkins. Because there is a portion of the wood fibre which becomes too short through breakage in manufacturing to be utilized in the machinery used to manufacture fluff pulp, it is dropped from the process as waste.

In another test, finer paper, newsprint, was used as the porous carrier. Newsprint is a finer paper because the wood strand is long and is still considered to be a quality material. The finer paper resulted in a relatively less hot but longer burning combustion. In both cases, it should be noted that the combustion of fuel source 20 appeared to be particularly efficient, with little, if any, soot being produced.

As best understood, in the present invention the porous carrier apparently transports the solid fuel which has been vaporized from within body 24 to the combustion surface 26 of body 24 wherein combustion is occurring. It is presently believed that the relative coarseness of the porous carrier regulates the speed with which this transport occurs and thus is one of the limiting factors in the combustion process. It is also believed that the porous carrier serves to assist heat transfer from the combustion surface 26 into body 24 to promote vaporization of the solid fuel and that the porous carrier allows for air to be drawn into body 24 below the combustion surface 26 to facilitate clean and complete combustion.

MARKED-UP VERSION OF CLAIM AMENDMENTS

34. (twice amended) A combustible fuel source manufactured by a method comprising the steps of:

(a) soaking a cellulose fibre product in water to form a first intermediate;

(b) [coarsely] macerating the first intermediate to form a pulp;

(c) drying the pulp to form a porous carrier;

(d) impregnating the porous carrier with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier; and

(e) solidifying the liquified solid fuel on the porous carrier to form the fuel source.

35. (amended) A combustible fuel source manufactured by a method comprising the steps of:

(a) soaking a cellulose fibre product in water to form a first intermediate;

(b) [coarsely] macerating the first intermediate to form a pulp;

(c) shaping the pulp into a preselected shape;

(d) drying the pulp to form a porous carrier;

(e) impregnating the porous carrier with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier; and

(f) solidifying the liquified solid fuel on the porous carrier to form the fuel source;

wherein the cellulose fibre product comprises a material selected from the group consisting of paper fibres, wood fibres, and cloth fibres; and

wherein the solid fuel comprises a fuel selected from the group consisting of paraffin wax, beeswax, wax derived from animal products, wax derived from vegetable products, petroleum wax, motor oil, and grease.

36. (twice amended) A combustible fuel source manufactured by a method comprising the steps of:

(a) soaking a cellulose fibre product in water to form a first intermediate;

(b) [coarsely] macerating the first intermediate to form a pulp;

(c) shaping the pulp into a preselected shape;

(d) drying the pulp to form a porous carrier;

(e) impregnating the porous carrier with a liquified solid fuel such that the liquified solid fuel is dispersed throughout the porous carrier; and

(f) solidifying the liquified solid fuel on the porous carrier to form the fuel source;

wherein the cellulose fibre product comprises a material selected from the group consisting of paper fibres, wood fibres, and cloth fibres; and

wherein the solid fuel comprises a fuel selected from the group consisting of paraffin wax, beeswax, wax derived

from animal products, wax derived from vegetable products, petroleum wax, motor oil, and grease; and

wherein the porous carrier is saturated with the liquified solid fuel.